



2440 Camino Ramon, Suite 125
San Ramon, CA 94583
Tel: (800)836-0199 Fax: (925)270-1894

CameraFTP VSS NVR Solution

The Most Advanced and Most Scalable
Network Video Recorder Solution

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About CameraFTP's VSS NVR

CameraFTP's Virtual Security System (VSS) software can turn a PC into a powerful cloud-enabled Network Video Recorder (NVR). VSS is free and is seamlessly integrated with CameraFTP's cloud surveillance service.

VSS is not only a low-cost alternative to regular DVRs, but more importantly, VSS can be setup as the **most advanced and most scalable** NVR system available! Depending on the hardware you select, you can configure VSS for:

- 2 to 5 channels for home and small offices.
- 6 to 12 channels for medium sized offices and retail stores.
- 12 or more channels for large offices or multiple sites.

VSS NVR can record data locally and to the cloud. The cloud service feature makes it very easy for you to:

- View or manage hundreds of cameras from a web browser or from our mobile apps.
- Assign cameras to sub-users with full-access rights.
- Share cameras with sub-users, other CameraFTP users, or non-members with view-only access.
- Publish cameras for anybody to view.

1. The Advantages of CameraFTP's VSS NVR

CameraFTP's VSS NVR is software and service centered; you can fully customize your surveillance solution based on your budget and security needs. Choose from a wide variety of laptops, IP cameras, and cloud service plans. The VSS NVR offers the lowest-cost solution for consumers as well as the most advanced and scalable solution for large corporations, surveillance service providers, and CameraFTP Resellers.

Compared with regular DVRs (NVRs), CameraFTP's VSS NVR has the following advantages:

- Flexibility and expandability
 - Most DVRs can only connect to a pre-configured number of cameras, e.g. a 4-channel DVR can only connect to 4 cameras. To add more cameras, you have to upgrade the DVR box.
 - VSS NVR can easily add more cameras. It is only limited by your PC's processing power. (The VSS software is extremely efficient; it can support many cameras on a regular PC.)
- No vendor lockup
 - Most DVRs can only work with cameras from the same vendor. This allows them to overprice their cameras, creating a model similar to printers and ink cartridges.

- With CameraFTP's VSS NVR, you can use any IP camera model, and even simultaneously use IP cameras by different manufacturers.
- Easy installation and wiring
 - Most cameras which work with a DVR system are bare-bone cameras—they don't have any processing power built-in. You must connect them to the DVR system using BNC video coaxial cables (which increases costs as professional wiring is typically required.)
 - VSS NVR allows you to choose from many Wi-Fi IP cameras and PoE cameras; you can even use USB webcams. Setup is so easy you won't need to rely on professionals.
- Cloud recording
 - Most DVR systems can only record data locally, which is obviously not as secure as offsite recording. Moreover, it is hard to play back locally recorded footage from a remote location.
 - VSS NVR can record data both locally and to the cloud (CameraFTP's remote servers). You can even record footage at different resolutions and frame rates, offering both the best quality for local viewing and the best security with low bandwidth usage for cloud recording and playback.
- Better hardware
 - DVR systems usually use low-powered mobile chips with little RAM, and many of them do not include local storage. Comparing the hardware configuration, a regular DVR is much lower than even the cheapest laptop.
 - VSS NVR leverages on a PC/laptop. Not only it has better hardware configuration, but also it (a laptop) includes a display, local storage, keyboard, touchpad (mouse), webcam, backup battery, Wi-Fi adaptor, multiple USB ports, etc.
Come back later. Language is very hard to understand in this section.
- Better software and versatility
 - DVR systems are typically embedded systems with a feature-limit. While it is simple, it also lacks powerful features offered by a PC, such as transferring files to an external storage device using USB or network, manage local recorded footage, viewing remote cameras, etc.
 - VSS NVR is as simple as a regular DVR, but because it leverages on a PC operating system, it can offer far more advanced features. Not only is the VSS NVR software more powerful than a standard DVR, but also because of the flexibility of the design, we will be able to increase features in the future, and you won't be forced to upgrade your hardware.
- Portability
 - DVRs are usually connected with cameras using BNC video coaxial cables; and cameras are usually mounted, so you cannot easily move the devices once they are setup.
 - VSS NVR is fully portable. You can easily move your laptop and cameras around because CameraFTP supports connection via Wi-Fi.

- Quality
 - DVRs are limited to only a few camera models specific to the DVR brand. For home users, the camera quality is often unnecessarily high, resulting in higher costs; for large businesses that require the best quality (such as large construction sites), these cameras often do not record at a high enough quality.
 - VSS NVR allows you to choose low-cost cameras for home monitoring, and high-end cameras for large site monitoring.

- Low cost

- DVRs are not elegantly designed. Below is an image of a high-end DVR.



These DVRs are not cheap; an 8-channel DVR system can easily cost over \$699 (e.g. <http://www.ebay.com/itm/like/201302422126?lpid=82&chn=ps>)

Despite the high price, most DVRs like the one in the link above still do not support Wi-Fi, have no monitor, and use cameras that also do not support Wi-Fi.

- With VSS NVR, to support 8 cameras, you just need a computer with **Intel Pentium N3540 @ 2.16GHz** and 4GB RAM. You can buy such a laptop for about \$300; you can buy 6 IP cameras for about \$300. So the cost is about the same. Since an IP camera usually costs more than a DVR camera, if you need fewer cameras, VSS NVR will cost lower; if you have an old laptop/PC, then the DVR is essentially free!

CameraFTP VSS is extremely efficient. Even with a low-end CPU such as Intel Celeron or Atom, you can typically use up to 5 cameras. With Intel Core i3, i5, or i7 CPUs, you can usually use 12 to 24 IP cameras! The actual number of cameras is also dependent on your video parameters (i.e. video resolution and frame rate).

2. VSS NVR Hardware Configuration

2.1 VSS NVR for Home and Small Office (2 to 5-Channel NVR)

For a standard home or small office:

- A PC/laptop
 - Use an old PC/laptop running any version of Windows, incl. XP
 - Buy a laptop for less than \$200 (as low as \$160!).
- 2 or more IP cameras (e.g. D-Link 932 camera with night-vision for \$46.95/camera)

Comparison with a comparable DVR / NVR:

Features	VSS Advanced NVR	Regular DVR/NVR
Total system cost	\$300	\$200 DVR + \$120 Cameras = \$320 Adding hard drive will cost additional \$100
Amount of storage	12GB - 450GB	Usually not included
System Setup	Easy	Easy
CCTV Monitor Included	Yes (with laptop)	No (must be connected to a TV or monitor!)
Wi-Fi support	Yes	No (mostly)
Installation/Wiring	No wiring required, DIY	Professional installation required
Local Recording	Yes	Yes
Cloud Recording	Yes	No
Cloud based live view	Yes	No (mostly)
Cloud based playback	Yes	No (mostly)
Cloud surveillance fee	As low as \$50/year (2 camera licenses, 640x480, 1fps, 7-day retention, motion detection)	N/A (Usually does not support cloud storage. Local storage can be easily destroyed by an intruder)

2.2 VSS NVR for Large Homes or Medium Sized Offices/Retails Stores (6 to 12-channel DVR)

For large homes or medium-sized offices/retail stores, we recommend the following VSS NVR setup:

- An old PC running any version of Windows, incl. Windows XP. (Pentium Quad Core CPU, 3-4GB RAM)
- 6 IP cameras (e.g. D-Link 932 camera with night-vision for \$46.95/camera)

Comparison with a comparable DVR / NVR:

Features	VSS Advanced NVR	Regular DVR/NVR
Total system cost	\$600 (300 laptop + 300 Wi-Fi IP cameras)	\$300 DVR + \$300 Cameras = \$600 Hard drive costs additional \$100
Amount of storage	500GB	Usually not included
System Setup	Easy	Easy
CCTV Monitor Included	Yes (with laptop)	No (must be connected to a TV or monitor!)
Wi-Fi support	Yes	No (mostly)
Installation / Wiring	No wiring required, DIY	Professional installation required
Local Recording	Yes	Yes
Cloud Recording	Yes	No
Cloud based live view	Yes	No (mostly)
Cloud based playback	Yes	No (mostly)
Cloud surveillance fee	\$137.50/year (6 camera licenses, 640x480, 1fps, 7-day retention, motion detection)	N/A (Usually does not support cloud storage. Local storage can be easily destroyed by an intruder)

2.3 VSS Advanced NVR for Large Site Monitoring (12 to 20 Channels or More)

For monitoring a large site with over 12 cameras, the recommended configurations are as follows:

- A spare PC running any version of Windows, incl. XP! (Intel Core i3 or higher, 4-6GB RAM, 1TB HDD)
Or buy a laptop for about \$400.
- 12 IP cameras (e.g. D-Link 932 or Trend TV-IP310PI).

Comparison with a comparable DVR / NVR:

Features	VSS Advanced NVR	Regular DVR/NVR
Total system cost	\$964 (\$400 laptop, \$564 IP camera)	\$750 DVR (incl. 8 cameras) + \$240 Cameras = \$990
Amount of storage	1TB	1TB
System Setup	Easy	Easy
CCTV Monitor Included	Yes (with laptop)	NO (must be connected to a TV or monitor!)
Wi-Fi support	Yes	No (mostly)
Installation / Wiring	No wiring required, DIY	Professional installation required
Local Recording	Yes	Yes
Cloud Recording	Yes	No
Cloud based live view	Yes	No (mostly)
Cloud based playback	Yes	No (mostly)
Cloud surveillance fee	Only \$270/year (12 camera licenses, 7-day retention, 640x480, 1 fps, motion detection)	N/A (Usually does not support cloud storage. Local storage can be easily destroyed by an intruder)

3. VSS NVR for Multi-site Monitoring and Remote Management

When you need to monitor many sites, regular DVRs are hard to manage:

- Accessing the device from different locations is difficult;
- Accessing the recorded data from a central location is difficult;
- Assigning camera access rights to different users is difficult.

VSS NVR has a big advantage over regular DVRs because of its integration with CameraFTP's cloud surveillance service. You can configure all cameras within the same account, or multiple sub-accounts. A system administrator can assign different users with access to different cameras.

If you need full access to VSS remotely, you can easily setup a remote desktop to access the PC from any location.

4. VSS NVR for Security Camera Installers/Resellers

While VSS NVR does not require professional installation for home users, having professional installation can add value to home users; business users often need professional installation anyway. The VSS NVR is easier to install than regular NVRs and offers better features and value to your clients.

You can also use VSS to monitor "Remote" Sites (places with no physical Internet connection, such as construction sites). When there is no physical network connectivity, regular DVRs usually will not work. Because VSS NVR uses a PC, you can connect to your cellular network with a 4G adaptor. Moreover, you can configure your PC as a Wi-Fi access point so that IP cameras can directly connect to your PC without a Wi-Fi Access point.

5. VSS NVR Setup Instructions

First, you will need to prepare the hardware based on Chapter 2.

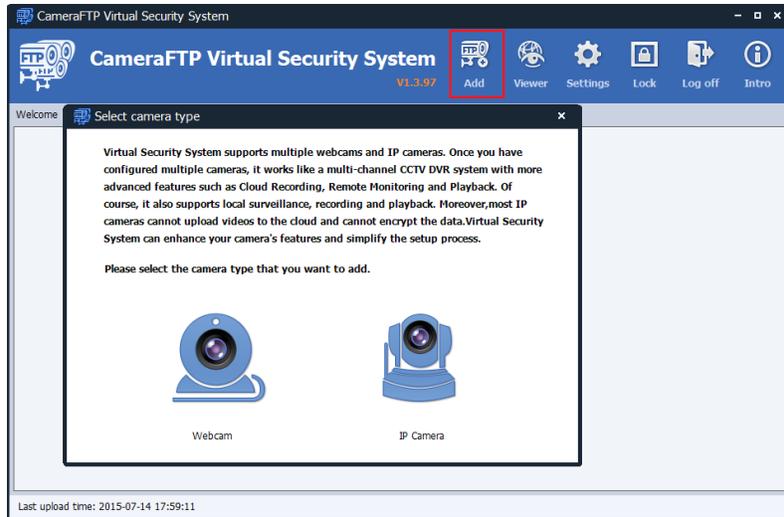
Next, you need to decide whether you want to mount your IP cameras. CameraFTP's VSS NVR relies on Wi-Fi. As long as the Wi-Fi signal is strong, you can place your cameras at any location. Unlike a regular DVR/NVR system, you don't have to mount your IP cameras. You can change the location of your cameras at any time. If you move to a new house/apartment, it is also very easy to move the system.

Whether you decide to mount your IP cameras or not, the actual mounting should be the last step as you need to make sure everything is working first.

5.1 Setting Up VSS NVR

Download and install CameraFTP VSS software from www.cameraftp.com.

Launch VSS, log on with your CameraFTP username and password, and then click the Add button to add a camera to VSS. You will be taken to the following window:



You can add a webcam or an IP camera from here.

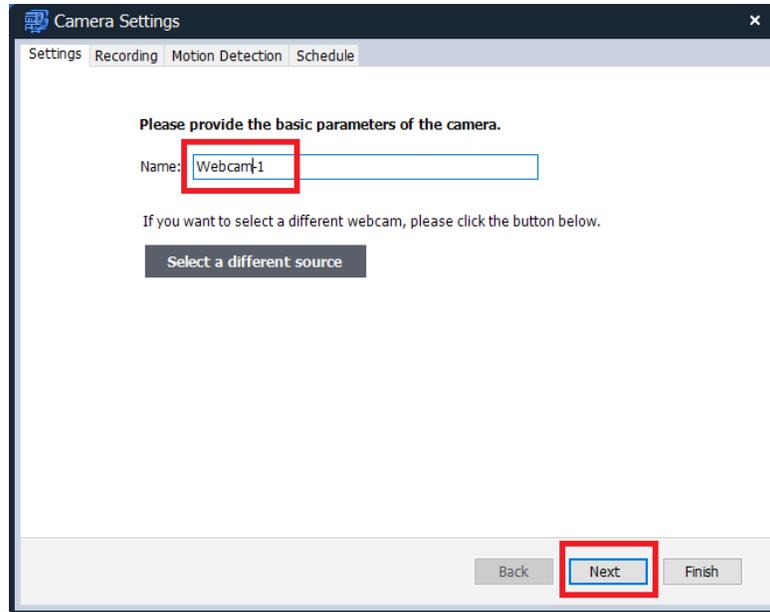
5.1.1 Add a webcam

If you have not purchased any IP cameras, or if you just want to use a webcam, then click the webcam icon. You will see the following window.



If your computer is connected with multiple webcams, you will be able to select a webcam and optionally a microphone for both video and audio recording. (Note: You can add multiple webcams to VSS; this can only be done one webcam at a time).

After you select a webcam, click Ok. You will be directed to the Camera Settings window:

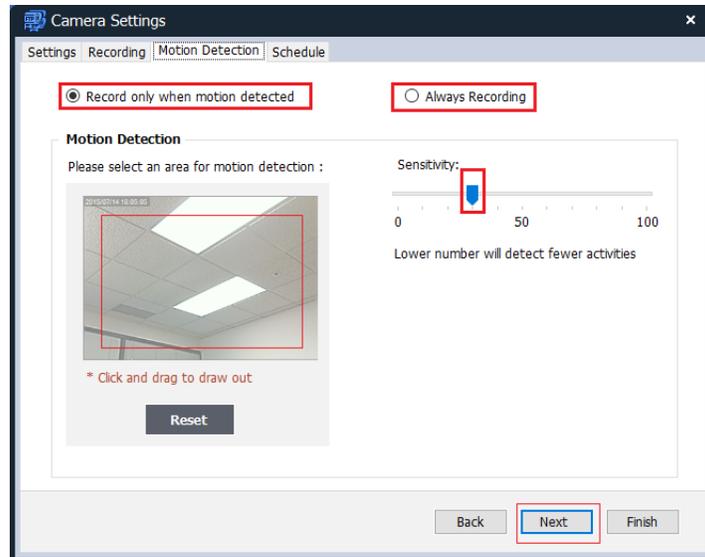


Here, you will need to enter the camera name and click “Next.” In the following page, you will need to configure your video resolution and the frame rate.

Note: If you have a free trial account, the video resolution is limited to only 320x240, and the frame rate is limited to 1 frame/s. Otherwise, VSS will limit the max resolution and frame rate based on your subscription plan. If you want to add multiple cameras, please make sure you have ordered enough camera licenses on www.cameraftp.com.

If you have just ordered a new subscription or upgraded your subscription, you must click the "Refresh my subscription level!" button to refresh your subscription info.

After you select a resolution and frame rate, click “Next.” The next step is to configure whether you want to enable Video Motion Detection.

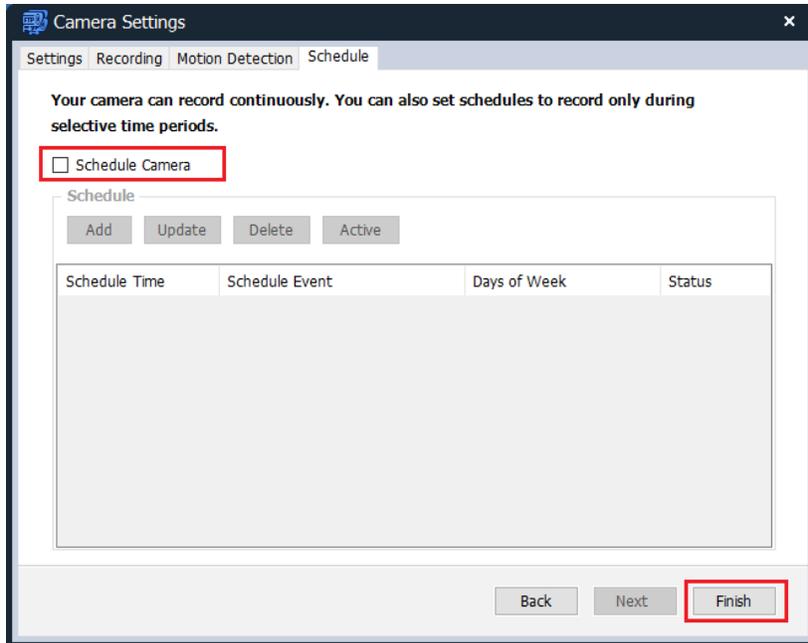


If you ordered a plan with motion detection enabled, then you must check the checkbox "Record only when motion detected." You also need to select a sensitivity level. A lower sensitivity level will detect fewer activities. Optionally, you can also specify a motion detection area by drawing a rectangle in the preview scene.

If you ordered a continuous recording plan, then you can check "Always Recording".

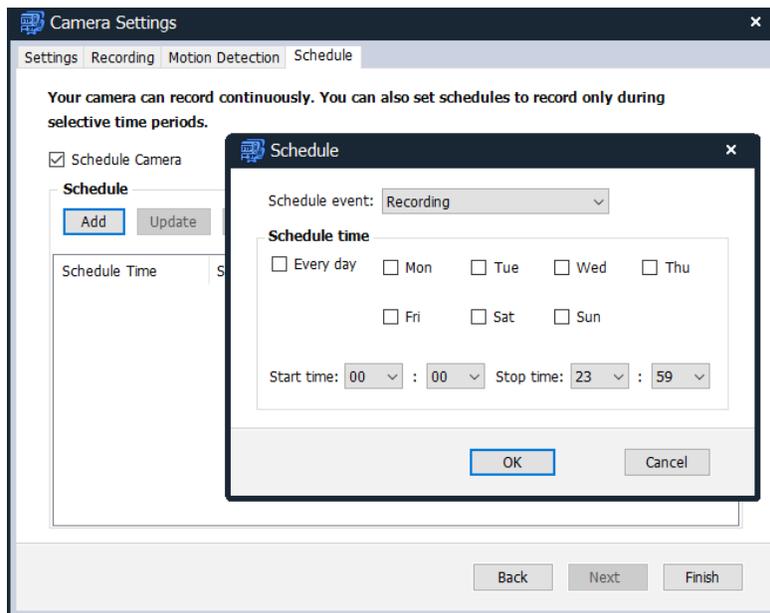
Note: If you are not sure whether to use motion detection or not, in general, motion detection is strongly recommended. It can lower your service cost by as much as 50%, and it will not upload any video clips when there is no activity. This uses less bandwidth and makes it easier to view the recorded footage. Please note if you use the camera to monitor a busy scene such that your camera will be recording for over 10 hours/day, then even if you select motion detection, you shall order a continuous recording plan.

Click Next to configure the recording schedules.

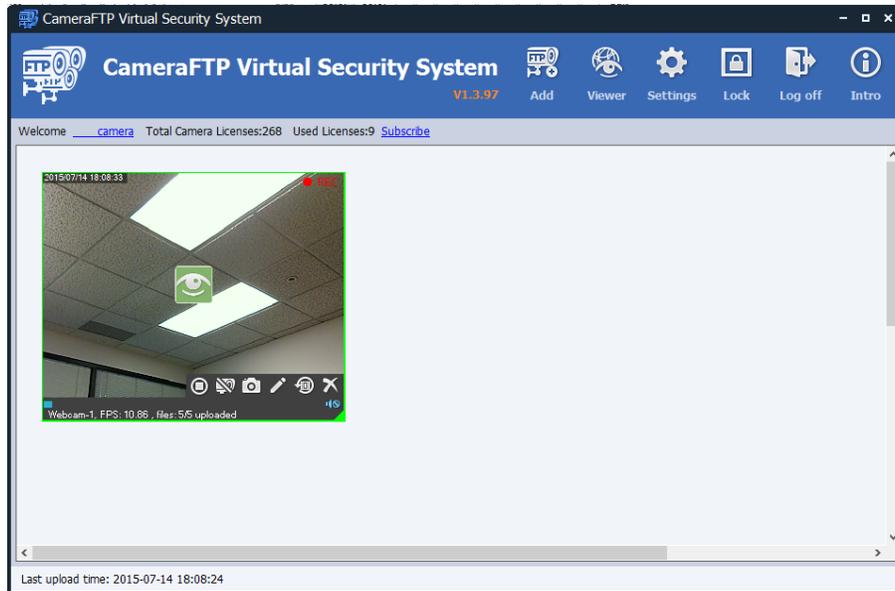


For most users, you can simply click Finish and your camera will be added.

If you only need the camera to record during certain time periods, then you can check the "Schedule camera" check box. This can reduce the amount of video uploaded and reduce network bandwidth usage when the camera is not uploading. Click the "Add" button to create a schedule. See the screenshots below:



After you finished adding the schedules, click Finish and your camera will be added to VSS. You will see a live view of the monitored scene.



Hover your mouse on the camera to access the toolbar. This will allow you to: stop the camera, disable recording, take a snapshot image, edit the camera info and source, view the recorded footage, or delete the camera.

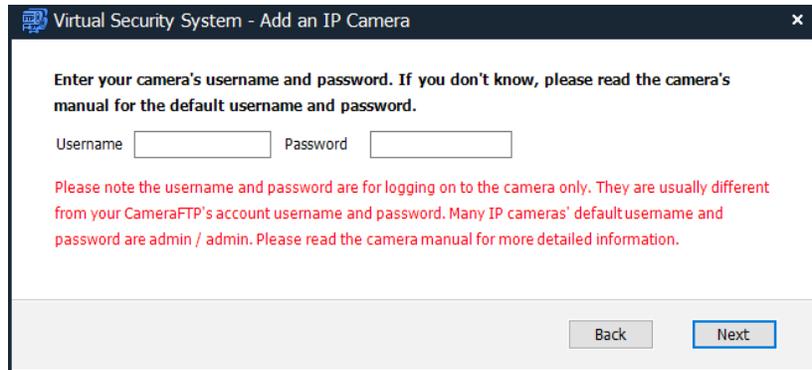
5.1.2 Add an IP camera

Adding an IP camera to VSS is easier than setting up a standalone IP camera. Simply connect your camera to the network; there is no other configuration required to connect your camera. For information about how to connect your IP camera to the network, please read your camera manufacturer's manual or contact your camera's manufacturer.

On the Add Camera page, click "IP Camera", and you will see the following window:

cameras." If you cannot determine which IP address belongs to your camera, try turning the camera off, scanning the network, and recording the list first; then turn on the camera, wait for one minute, and then scan the network again. The new IP address in the list will belong to your camera.

Select the camera and click "Next"; you will be asked to enter the camera's username and password.



Virtual Security System - Add an IP Camera

Enter your camera's username and password. If you don't know, please read the camera's manual for the default username and password.

Username Password

Please note the username and password are for logging on to the camera only. They are usually different from your CameraFTP's account username and password. Many IP cameras' default username and password are admin / admin. Please read the camera manual for more detailed information.

Back Next

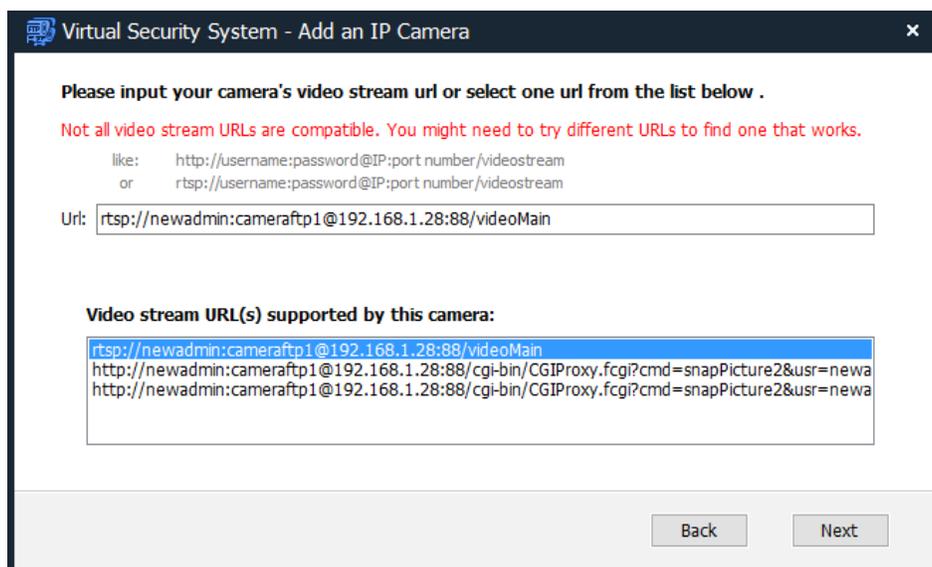
If you have not changed your camera's password before, then usually you can enter the camera's default username and password here and click "Next."

Note: Some new model cameras may require you to change your password before you can access the camera. If the correct default username and password don't work, you will need to directly access the camera's configuration page by entering the following address in a web browser:

`http://IP_ADDRESS:PORT_NUMBER/`

Or use the manufacturer's software to change the default username/password. For better security, we recommend that you change your default username and password.

If the camera is compatible, then VSS will be able to find a list of supported video streams as shown below:



Virtual Security System - Add an IP Camera

Please input your camera's video stream url or select one url from the list below .

Not all video stream URLs are compatible. You might need to try different URLs to find one that works.

like: `http://username:password@IP:port number/videoStream`
or `rtsp://username:password@IP:port number/videoStream`

Uri:

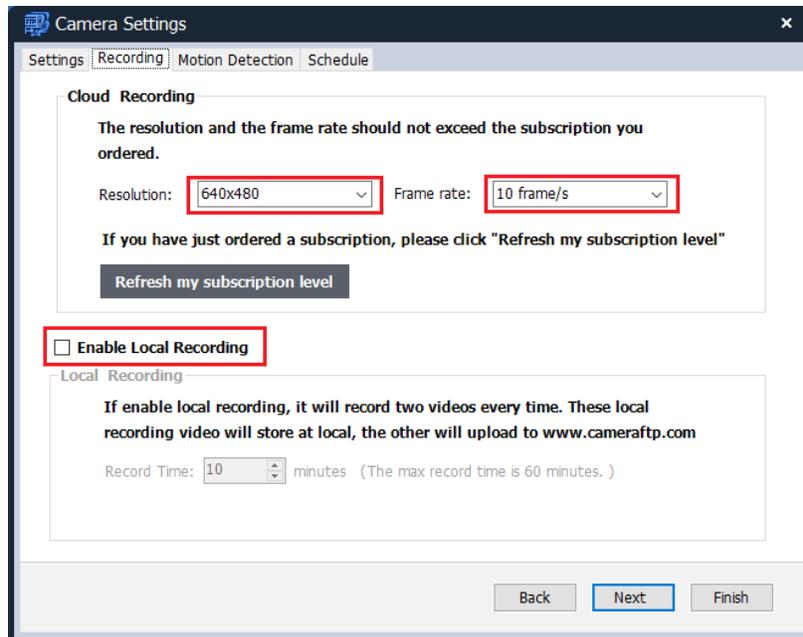
Video stream URL(s) supported by this camera:

`rtsp://newadmin:cameraftp1@192.168.1.28:88/videoMain`
`http://newadmin:cameraftp1@192.168.1.28:88/cgi-bin/CGIProxy.fcgi?cmd=snapPicture2&usr=newa`
`http://newadmin:cameraftp1@192.168.1.28:88/cgi-bin/CGIProxy.fcgi?cmd=snapPicture2&usr=newa`

Back Next

Different IP cameras may have very different video streams. Some cameras may support multiple video streams. You can select a suitable video stream by looking at the URL. The URL contains information about the type of video stream your camera supports. If you are not sure, you may have to try different video streams and pick the one that works best.

If the selected video stream works fine, then the remaining setup steps are very easy. Please refer to the "Add a webcam" section if you have any questions. The only difference is you can also enable local recording.



You can add multiple webcams and IP cameras to VSS. When finished, you will be able to view your cameras in real-time. VSS will also upload the recorded footage to www.cameraftp.com.



6. Using CameraFTP VSS

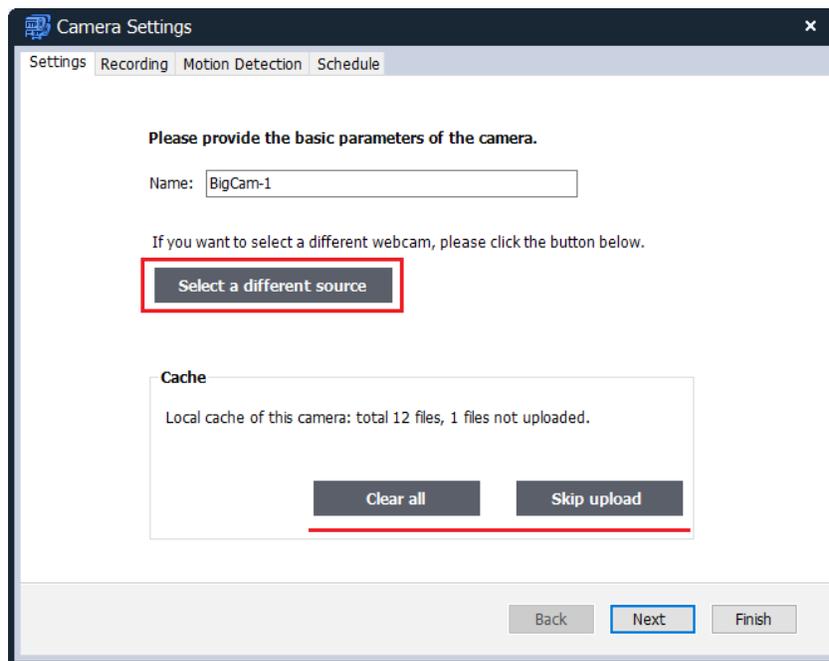
VSS is extremely easy to use once you have added cameras to it. If you need to manage a camera, hover your mouse over the camera's live view window, and then a toolbar will be displayed. You can stop, edit or delete a camera, disable recording, take a snapshot image, view locally recorded footage, or view the camera from the cloud (using a browser).

6.1 Change Your Camera's Parameters or Video Stream

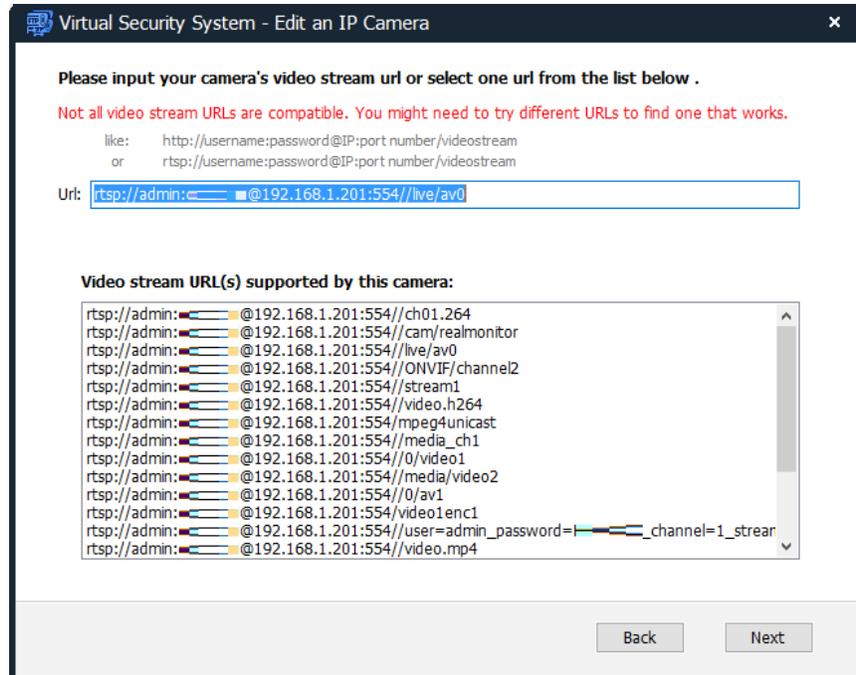
Most IP cameras support multiple video streams. These streams usually have different resolutions, frame rates, bit rates, and encoding formats. When you add an IP camera, you need to select a video stream. To select a video stream, hover your mouse over the live view window, then select Edit as shown below:



Clicking Edit will open the Camera Settings window as shown below:



On this screen, click “Select a different source” to display a list of video streams supported by this IP camera. Please note that different cameras may have different video stream lists.



In some cases the URL of the video streams will be self-explanatory. When it is not, you may have to test different video streams to check which stream(s) work with VSS. After you select a new stream, please allow about 1 minute for VSS to connect to the new video stream.

Other parameters can easily be changed in the Recording, Motion Detection, and Schedule tabs. Please refer to the "Add an IP camera" section (5.1.2) for more details.

6.2 Delete a Camera from VSS and All Recorded Footage

To delete a camera, you need to enter your secure password. This is a CameraFTP-unique security feature. It offers much stronger protection than local recording and other cloud recording services.

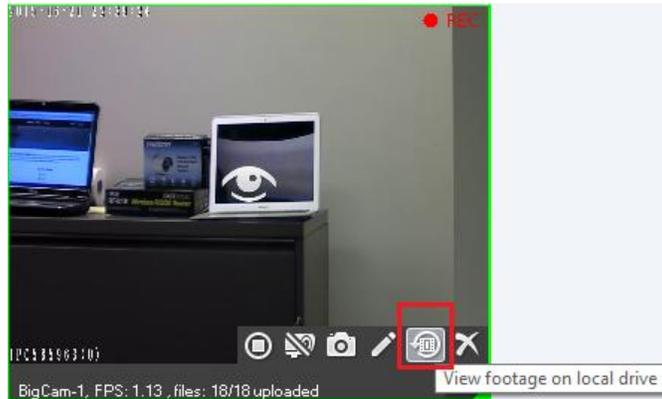
Local recording is not secure because an intruder can easily steal or destroy your camera and the recorded data; however, cloud recording could also be insecure if the intruder can delete your data from the cloud. When an intruder has physical access to your computer, there is a chance your data in the cloud be deleted; this is the case with other cloud services and regular FTP servers.

CameraFTP requires a second password (called the "secure password") for deleting files or cameras. By default your secure password is the same as your regular password. It is strongly recommended that you change your secure password. If you forgot your secure password, please contact CameraFTP support to have it reset to match your regular password. Because the secure password is never configured/saved in

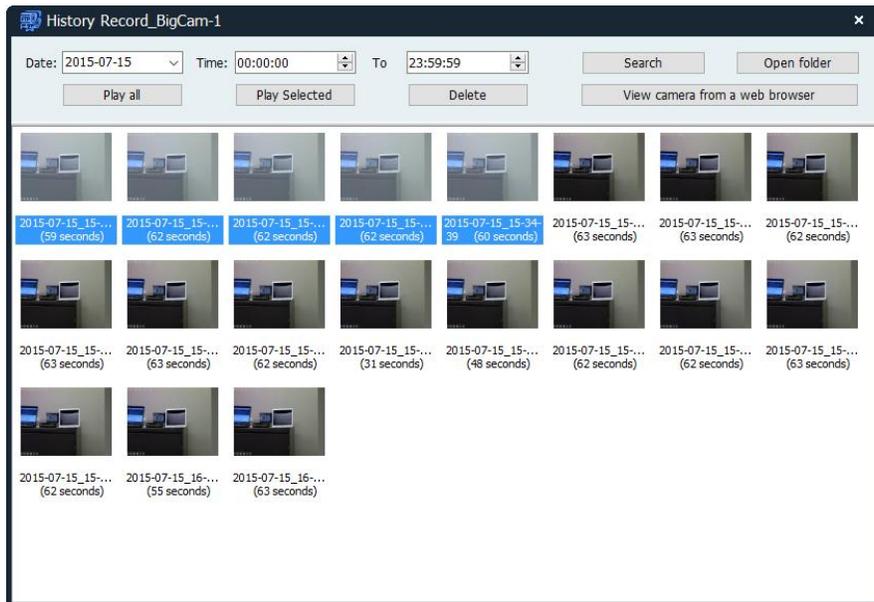
your camera or VSS, a hacker cannot delete the recorded footage even with access to your CameraFTP account password.

6.3 Access Locally Recorded Footage

Click the "View footage on local drive" button as shown below:

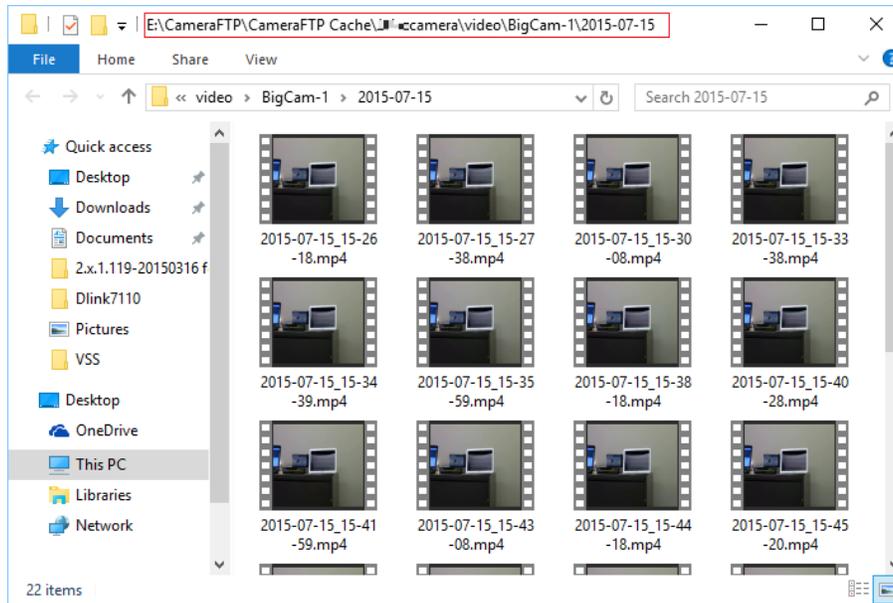


This button will display a list of the recorded video clips on your hard drive:



You can search video clips based on the time interval, or double click to a play a video clip. You can also play multiple video clips, or play all video clips one by one.

If you need to directly access the local video storage folder, click the "Open Folder" button, which will open a Windows Explorer window as follows:



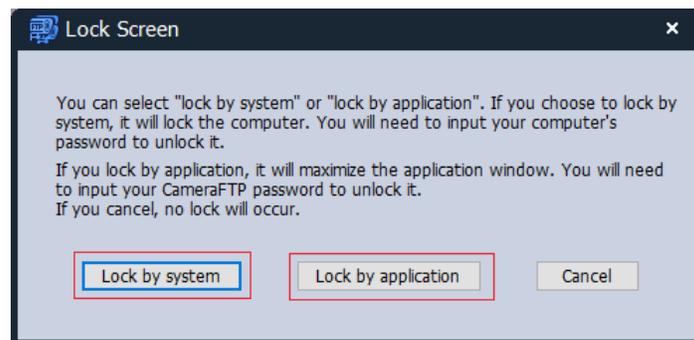
Using Windows Explorer, you can easily copy and paste the recorded footage from this computer to another computer or an external drive. Please be aware that you do not need to enter a secure password to delete locally recorded files. In fact, your local files (and PC) can always be deleted/destroyed by an intruder.

6.4 Change the Live View and Lock the Program

VSS allows you to adjust the camera live view window to the size you prefer. Just right click on a blank area, and you will be able to change the live view window size. You can also manually move the live view window or change its size.

6.4.1 Lock the Program

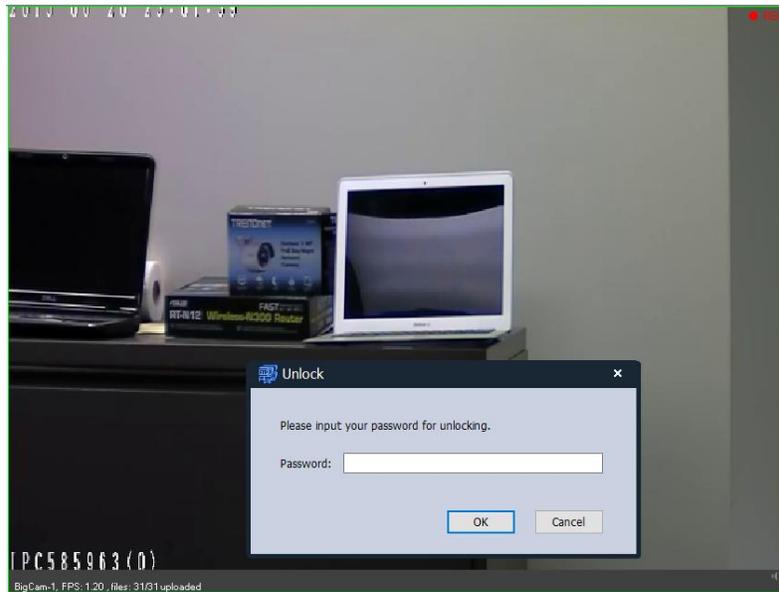
For better security, VSS can be locked so that others cannot delete recorded footage. To lock VSS, click the Lock button in the toolbar. You will then see the following dialog:



From here, there are two methods to lock the screen:

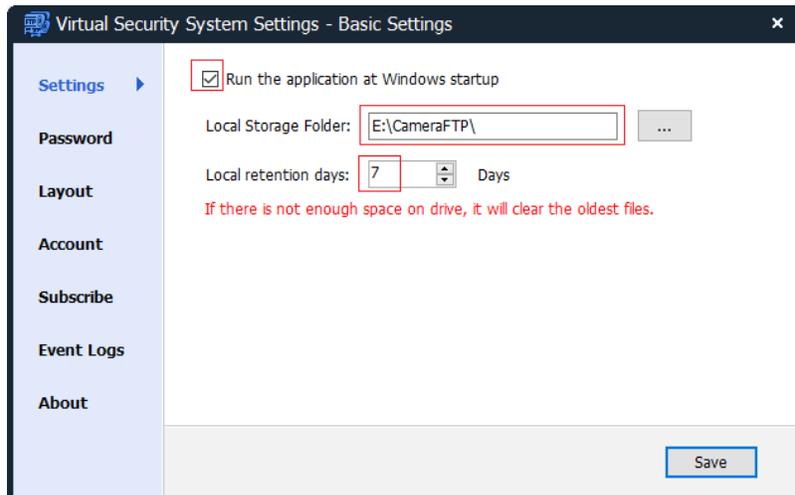
- Lock by the Operating System. In this case, the computer screen will display a system logon window (and the display can be turned off). VSS will continue recording in the background.

- Lock by the Application. In this case, VSS will display the live view windows of your cameras similar to a CCTV system. All toolbar buttons are hidden and the functions disabled. To access VSS again, a user must unlock the system by entering your CameraFTP password. The following window is an example of the program being locked (you can display multiple cameras in this window):



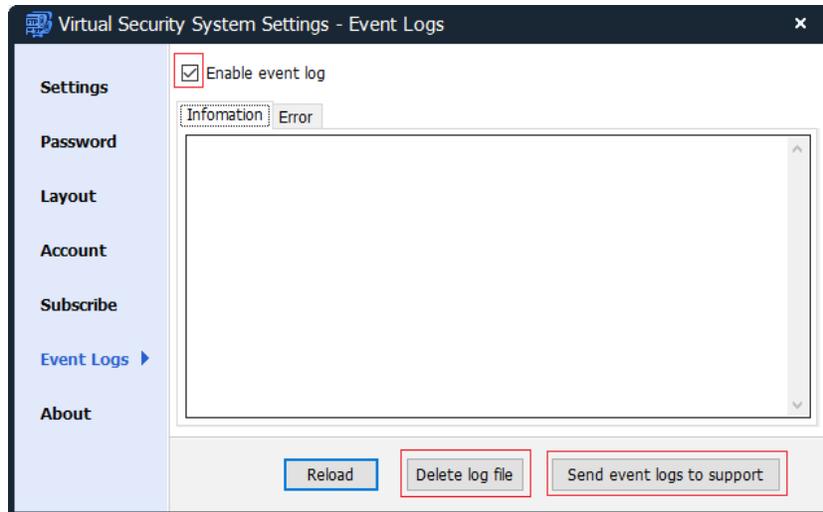
6.5 Access VSS's Settings Page

Click Settings in the main toolbar, and you will be taken to the following screen.



On this screen, you can configure whether VSS should automatically start after you logon. You can also select a storage location for local recording. The local retention period is set to the same as cloud retention days, but you can adjust length of this period. If your local storage is full, the oldest files will be deleted first. Otherwise, the local footage will be deleted based on the local retention days.

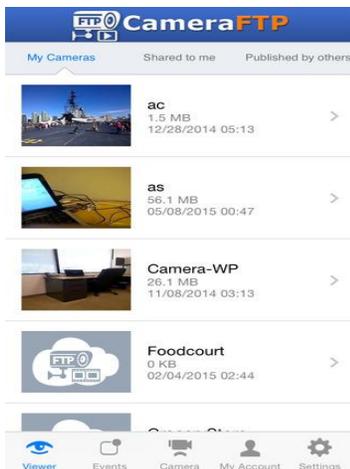
Another feature could be useful is the event log feature. Normally you don't need to use it. However, if VSS is not reliable, you can turn on the "Enable event log" feature. You can look at the events written in the log. If you see any errors or exceptions, please click "Send event logs to support".



7. CameraFTP Viewer

After you have added your cameras to VSS, you can view the cameras in real-time within VSS. You can display cameras' live views in different sizes, or manually resize the live view window. You can also click the Lock button and then select Lock by Application. This will display the camera live view in full screen preventing other users from messing up with the software.

With VSS NVR's seamless integration with CameraFTP cloud service, you can easily view or play back your cameras from anywhere. Just log on to www.cameraftp.com from a web browser, or download our mobile viewer apps for iPhone, Android and Windows phone.



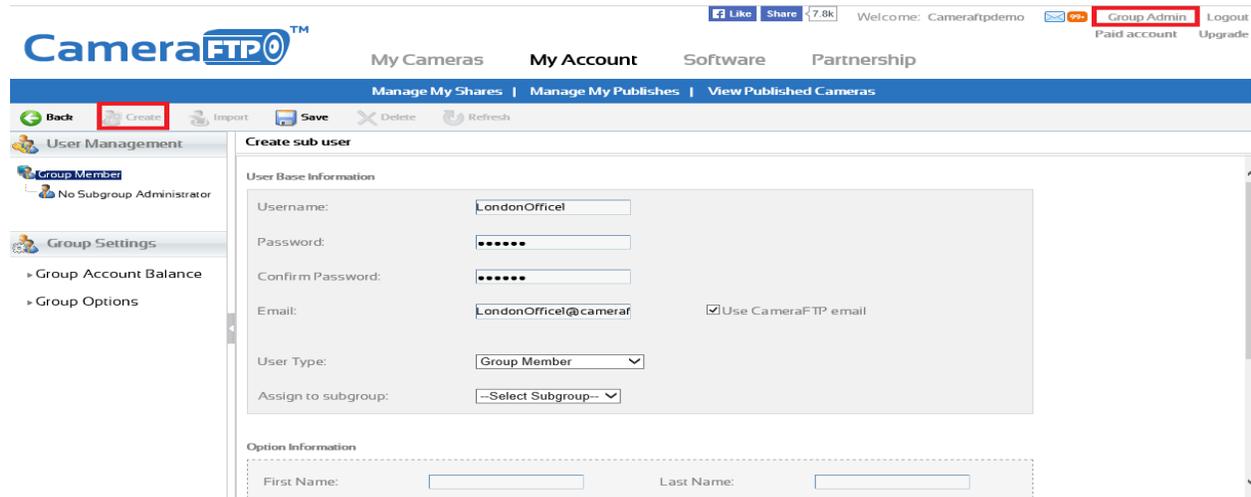
8. Share / Publish Cameras and Group User Management

On CameraFTP.com, you can share cameras with other users. Each user can only access the cameras you shared to him/her.

Large corporations and CameraFTP resellers can use our Group Account Service (or Instant Reseller Program). They can create multiple sub-users. There is no user license fee. To become a Group Account or Instant Reseller, please log on to www.cameraftp.com and visit:

<https://www.cameraftp.com/group/groupintro.aspx>

This feature is only offered to large accounts and resellers. If you qualify, you can upgrade to a group account for free. You can then click on Group Admin to create and manage sub-accounts.



The screenshot shows the CameraFTP web interface. At the top, there is a navigation bar with the CameraFTP logo, 'My Cameras', 'My Account', 'Software', and 'Partnership'. A secondary bar contains 'Manage My Shares', 'Manage My Publishes', and 'View Published Cameras'. Below this is a toolbar with icons for 'Back', 'Create', 'Import', 'Save', 'Delete', and 'Refresh'. The 'Create' button is highlighted with a red box. On the right side of the top bar, there are links for 'Like', 'Share', '7.8k', 'Welcome: Cameraftpdemo', 'Group Admin' (highlighted with a red box), 'Logout', 'Paid account', and 'Upgrade'. The main content area is titled 'Create sub user' and contains a form with the following fields: 'Username' (LondonOffice), 'Password' (masked with dots), 'Confirm Password' (masked with dots), 'Email' (LondonOffice@cameraf), a checked checkbox for 'Use CameraFTP email', 'User Type' (Group Member), and 'Assign to subgroup' (--Select Subgroup--). Below the main form is an 'Option Information' section with 'First Name' and 'Last Name' fields.

If you want a user to be able to have complete control of a certain camera, you can add the camera to the sub-account directly. If you want a sub-user to have view-only rights to a camera, add the camera to your main account and share it with the sub-user. When that user logs on, the user will see a list of cameras shared to the user's account.

If you want to let anybody view your cameras, use the publish feature.

With CameraFTP's cloud based solution, you can have thousands of cameras configured with 100s of VSS NVRs in different locations, all managed by the same Group Account (or reseller account). This cannot be done by a regular DVR solution.

Appendix:

1. Using Webcam as an IP Camera (Webcam-based VSS NVR)

VSS NVR does not require a wireless IP camera; it does not even require an IP camera. For starters, you can use a built-in webcam or any USB webcam as an IP camera. If you like, you can wire a long USB extension cable(s) in your house. This way, you can have multiple cameras placed in different locations. USB webcams are cheap (<\$10) and extremely easy to setup with VSS; wiring USB extension cables is usually easier than wiring power cables or video cables.

However, webcams also have a few disadvantages:

- There are no Wi-Fi capable webcams. Webcams are usually powered by a USB cable. So you must wire USB cables if you need multiple cameras. (The advantages are you don't need a power adaptor and power outlet, and it is fool-proof.)
- There are very few webcams that support night vision.

If the scene you monitor will always have lights on, or if you only want to record during the day time, then webcams will work perfectly fine.

2. Connect IP Cameras to CameraFTP without a PC

You can connect an IP camera directly to CameraFTP without a PC. Whether you should do so or not is similar to the question of "whether you should buy a DVR/CCTV surveillance system or just buy multiple IP cameras".

Both solutions might work well. There are a few differences, and VSS usually can work better:

- VSS supports high quality local recording without requiring very fast Internet connection. If you need local recording (DVR) feature, then you should use VSS NVR.

VSS NVR supports both local recording and cloud recording. The local recording and cloud recording can be configured with different parameters. This way, you can achieve the best quality recording via local storage, while at the same time, achieve higher level of security via offsite cloud recording and without worrying about using too much bandwidth or paying a very high service fee.

- VSS supports local live view similar to DVR + TV (CCTV) system. Many retail stores display the live views on a monitor anyway. If so, VSS NVR is better than DVR or standalone IP cameras.
- If your IP camera cannot upload video clips, or cannot support the right video format, then you need VSS.

Note: Not all IP cameras can upload video clips. Even the popular D-Link 932 cannot upload video clips. Most D-Link IP cameras cannot continuously record video clips. Foscam and Axis IP cameras can only upload video clips in .MKV format, which is not compatible with most video players. (CameraFTP's Android based viewer supports this video format)

VSS can add the .MP4 video upload feature for those IP cameras.

- If your IP camera cannot support the right video frame rate, or cannot upload video clips continuously, then you need VSS.

Not all IP cameras support all parameters. For example, D-Link cameras can set frame rate of 4fps, but not 5 fps; and it does not support continuous recording.

- Lastly, adding an IP camera to VSS is much easier than configuring an IP camera. If you are not good at configuring IP cameras, then using VSS will be an easier choice (if your cameras are compatible).

Cost-wise, if you have an old PC/laptop, then using VSS NVR does not add any cost.